10/04/23 • BIG FOOD › NEWS

The Nutritional 'Dark Matter' in Your Food — And Why Synthetic Food Is So Dangerous

Remarkable as it may seem, 99% of the proteins, carbohydrates, fats, minerals, vitamins and other biochemical scomponents making up whole food are a complete mystery. So how can scientists replicate those components in lab food? And what are we missing in our diets if those components aren't all there?

By Dr. Joseph Mercola

Miss a day, miss a lot. *Subscribe to The Defender's Top News of the Day.* ***It's free.***

Story at a glance:

- An estimated 99% of the components making up whole food are a complete mystery. The U.S. Department of Agriculture's (USDA) National Nutrient Database for Standard Reference details 188 nutritional components of food, including 38 flavonoids, yet scientists estimate there are more than 26,000 different biochemicals in our food.
- We know even less about the constituents of processed foods and synthetic foods, which falsely claim to be "equivalents" to whole foods, such as "animal-free meats" or "animal-free milk."
- Scientists cannot create equivalence when they don't even know what 85% or more of the whole food they're trying to replicate consists of.
- A paper published in the April issue of Animal Frontiers warns that cultured products are not nutritionally equivalent to the meats they're intended to replace.
- A May report by the Food and Agriculture Organization concluded there are at least 53 potential health hazards associated with lab-grown meat, including the possibility of contamination with heavy metals, microplastics, nanoplastics and chemicals, allergenic additives, toxic components, antibiotics and prions.

Do you know what's in the food you eat? Remarkable as it may seem, 99% of the components making up whole food are a complete mystery.

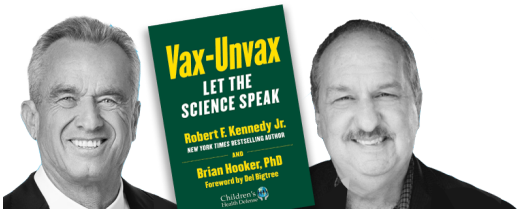
As reported by New Scientist in July 2020:

"We know next to nothing about the vast majority of compounds in our diet … 'Our understanding of how diet affects health is limited to 150 key nutritional components,' says Albert-László Barabási at Harvard Medical School, who coined the term nutritional dark matter.

"'But these represent only a small fraction of the biochemicals present in our food' … The idea that food is a rich and complex mix of biochemicals is hardly news.

"Even the well-known macronutrients — proteins, carbohydrates and fats — are hugely diverse. There's also a vast supporting cast of micronutrients: minerals, vitamins and other biochemicals, many of which are only present in minuscule quantities, but which can still have profound health effects."

RFK Jr. and Brian Hooker's *New* Book: "Vax-Unvax"



The official source of nutritional information is the USDA's National Nutrient Database for Standard Reference.

It lists the composition of hundreds of thousands of foods, but it's not as detailed as you might imagine.

In all, it details only 188 nutritional components, including 38 flavonoids, yet scientists estimate there are more than 26,000 different biochemicals in our food.

As noted by New Scientist: "With the USDA as your guide, 99.5% of the components in food are a mystery," and as noted by Barabási, "It would be foolish to dismiss 99.5% of the compounds we eat as unimportant … We will not really understand how we get sick if we don't solve this puzzle."

Searching for nutritional 'dark matter'

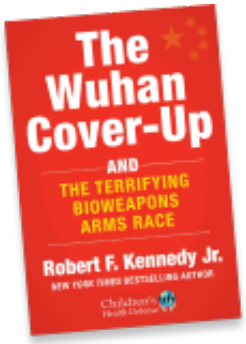
Disturbed by the information gap, an international team of researchers started working on a more comprehensive database a decade ago called FooDB, which as of 2020 contained information on some 70,000 nutritional compounds.

Yet even this database still has a long way to go. An estimated 85% of the nutritional components listed remain unquantified, meaning they know a food contains a particular component, but they don't know how much.

The health implications of most compounds also remain largely unknown.

New Scientist notes:

> "This is also true of individual micronutrients. 'Consider beta-carotene,' says Barabási. 'It tends to be positively associated with heart disease, according to epidemiological studies, but studies adding beta-carotene to the diet do not show health benefits. One potential reason is that beta-carotene never comes alone in plants; about 400 molecules are always present with it. So epidemiology may be detecting the health implications of some other molecule.'
>
> "Another probable cause is the effect of the microbiome on dark nutrients, says [FooDB founder David] Wishart. 'Most dark nutrients are chemically transformed by your gut bacteria.'
>
> "That's probably why studies on the benefits of different foods give relatively ambiguous results. We don't properly control for the variation in gut microflora, or our innate metabolism, which means different people get different doses of metabolites from their food."



"The Wuhan Cover-Up" by Robert F. Kennedy Jr.

ORDER NOW

Processed foods are an even greater mystery

The reason I started with that background is because we know even less about the constituents of processed foods and synthetic foods that ignorantly claim to be "equivalents" to whole foods, such as "animal-free meats" or "animal-free milk."

Food processing alone will often alter the composition of bioactive molecules in a food and hence the food's impact on health, but today, processed foods also contain a wide array of synthetic chemicals that, prior to the modern era, were never part of the human diet.

As such, they pose incredible risks to long-term health and well-being. Processed foods may also have intergenerational effects.

"How can scientists create equivalence when they don't even know what 85% or more of the whole food they're trying to replicate consists of?"

In recent years, the idea that we can simply replace whole foods with synthetic, genetically modified or lab-grown alternatives that are wholly equivalent to the original food has taken root. In reality, that's simply impossible.

How can scientists create equivalence when they don't even know what 85% or more of the whole food they're trying to replicate consists of?

Common sense will tell you they can't. It might look, smell and even taste similar, but the micronutrient composition will be entirely different, and as a result, the health effects will be incomparable as well.

Animal-free equivalence is a PR fraud

Take cultured meat, for example. It's said to be equivalent to real animal meat because it's grown from animal cells. The cells are then grown in a nutrient solution inside a bioreactor until they become a meat-like slab.

Similarly, Bored Cow animal-free milk is a dairy alternative made with whey protein obtained through a fermentation process, plant-based fats (in lieu of milk fats), citrus fiber (for creaminess) and added vitamins and minerals.

Defenders of cultured meat insist that this product is not "fake meat" but "actual meat,"

the only difference is that no animal had to be slaughtered to create it.

Cultured meat and other synthetic foods are also said to be more environmentally friendly. But nothing could be further from the truth.

Their impact is far more akin to that of the pharmaceutical industry than the food industry.

According to a recent "cradle-to-gate life cycle" analysis, the lab-grown meat industry produces anywhere from four to 25 times more CO_2 than traditional animal husbandry.

Based on this assessment, each kilo of cultured meat produces anywhere from 542 pounds (246 kilos) to 3,325 pounds (1,508 kg) of carbon dioxide emissions, making the climate impact of cultured meat four to 25 times greater than that of conventional beef.

And this information is only provided to refute those who believe the global warming fallacy.

As noted by the authors, investors have poured billions of dollars into the animal cell-based meat sector based on the theory that cultured meat is more environmentally friendly than beef.

However, according to these researchers, that hype is based on flawed analyses of carbon emissions.

Cultured meat is also the epitome of ultra-processed food and therefore likely to cause health problems like those caused by other ultra-processed foods, such as obesity, cardiovascular diseases, Type-2 diabetes, metabolic syndrome, irritable bowel syndrome, cancer, mental health problems and increased all-cause mortality.

A paper published in the April issue of Animal Frontiers also warned that there are several implications of cell-based meat that need to be considered but aren't, including the fact that cultured products are not nutritionally equivalent to the meats they're intended to replace.

The claim that no animals are killed in the process is also false. At present, most cultured or cell-based meats are created by growing animal cells in a solution of fetal bovine serum, which is made from the blood of unborn calves.

In short, pregnant cows are slaughtered to drain the unborn fetus of its blood.

Is it safe to eat tumors?

There are also many unanswered questions surrounding safety. For example, to get the cell cultures to grow, some companies are using immortalized cells, which technically speaking are precancerous and/or fully cancerous.

(Other companies use embryonic stem cells or cells from living animals.)

The reason for using immortalized cells is that normally behaving cells cannot divide forever. Most cells will only multiply a few dozen times before they become senescent (old) and die.

This won't work when your intention is to grow thousands of pounds of tissue from a small number of cells, hence they use immortalized cells that have no off switch for their replication and can divide indefinitely.

Meat substitutes cultured in this way could therefore be thought of as tumors, seeing how the flesh is entirely made up of precancerous or cancerous cells. Is it safe to eat tumors? We don't know.

Massachusetts Institute of Technology biologist Robert Weinberg, Ph.D., has proposed that humans can't get cancer from these cells because they're not human cells and therefore cannot replicate inside your body.

However, there's no long-term research to back this theory.

Your support helps fund this work, and CHD's related advocacy, education and scientific research.

DONATE NOW

Dietary headaches to come

It's also important to realize that the nutritional composition and safety of synthetic foods will vary depending on the brand.

When you're dealing with beef, for example, the meat from one cow will be relatively identical to that of any other cow (one major exception being the way they're raised and fed).

One wild-caught salmon is comparable to any other wild-caught salmon and each russet potato is more or less identical to every other russet potato.

However since each synthetic food brand uses proprietary ingredients and processes, no two will have identical composition or safety, so even if one is eventually proven safe and nutritious, those results cannot be applied to any other brand.

This variance has the potential to create major problems in the future when all sorts of foods have been replaced with synthetic non-equivalents.

How do you determine which cultured beef, chicken or salmon brand might be best for you? How will you devise a sensible diet plan when every food comes in myriad variations of varying composition and safety?

Synthetic foods pose unique food-safety hazards

Many synthetic food proponents claim lab-created food will bypass a host of food-safety problems, but the converse is far more likely to be true.

Sure, beef, for example, can be contaminated during processing, packaging, transport or storage, or during the cooking process.

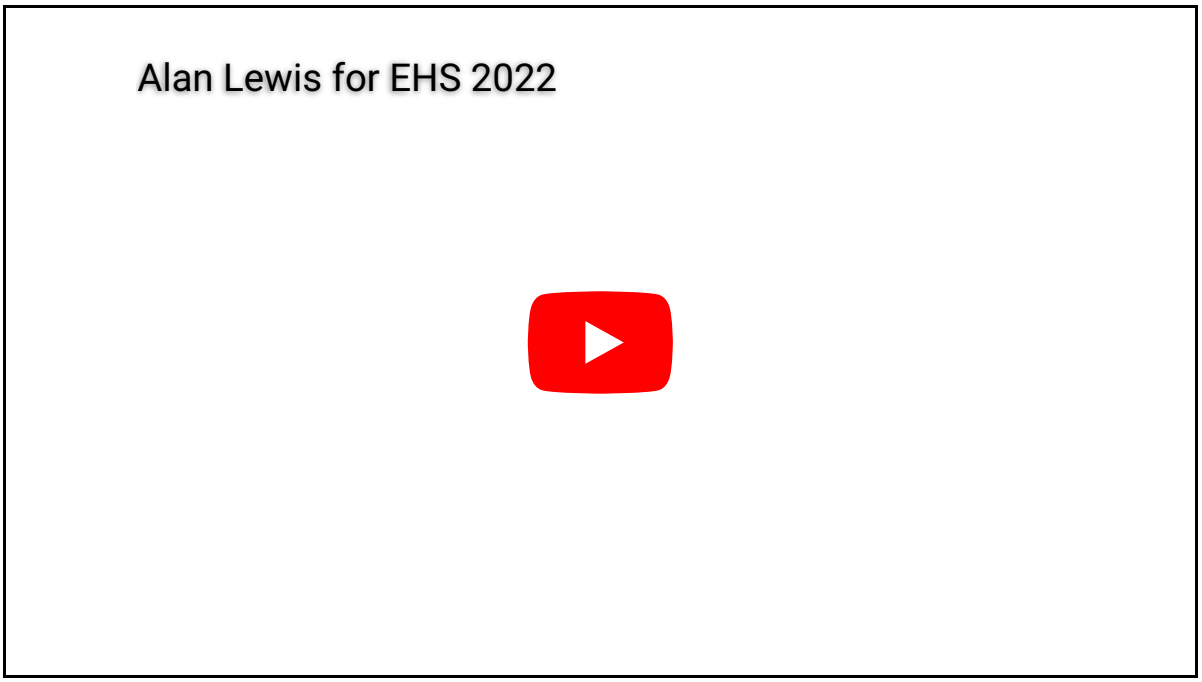
But in cultured meat, every ingredient and processing step brings with it the potential of contamination and any of the hundreds of ingredients could have toxic effects, alone or in synergy.

Indeed, an in-depth analysis of the available evidence by the Food and Agriculture Organization of the United Nations and a World Health Organization expert panel, published in May, concluded there are at least 53 potential health hazards associated with lab-grown meat.

Among them are the possibility of contamination with heavy metals, microplastics, nanoplastics and chemicals, allergenic additives, toxic components, antibiotics and prions.

What's more, some of the ingredients that go into synthetic biology like cultured meat are regulated as "non-detectable manufacturing aids," and you won't even know what they are. Israeli startup Profuse Technology, for example, has developed a growth media supplement that massively encourages protein growth.

As reported by Food Navigator Europe in an article titled, "Cultivated Meat 'Breakthrough': Media Supplement Achieves Full Muscle Maturation on Scaffold Within 48 Hours," the supplement reduces the time to grow filets and steaks by 80% and augments the protein in the final product by a factor of five.



An unsustainable model

The cultured meat process also produces toxic biowaste — a problem that doesn't exist in conventional agriculture and food processing. In the video above, Alan Lewis, vice president of government affairs for Natural Grocers, reviews what goes into the making of synthetic biology.

The starting ingredients are typically cheap sugars and fats derived from genetically engineered corn and soy, grown in environmentally destructive monocultures with loads of herbicides, pesticides and synthetic fertilizers.

As a result, they're loaded with chemical residues. Hundreds of other ingredients may then be added to the ferment to produce the desired end product, such as a certain protein, color, flavor or scent.

The most often used microorganism in the fermentation process is E. coli which has been gene-edited to produce the desired compound through its digestive process.

The microorganism must also be antibiotic-resistant since it needs to survive the antibiotics used to kill off other undesirable organisms in the vat.

As a result, antibiotic-resistant organisms also become integrated into the final product, and the types of foodborne illness that might be caused by gene-edited antibiotic-resistant E. coli and its metabolites are anyone's guess.

In addition to the desired target metabolite, these gene-edited organisms may also spit out non-target metabolites with unknown environmental consequences and health effects. But that's not all. Once the target organisms are extracted, what's left over is hazardous biowaste.

While traditional fermentation processes, such as the making of beer, produce waste products that are edible by animals, compostable and pose no biohazard, the biowaste from these synthetic biology ferments must first be deactivated and then must be securely disposed of. It cannot go into a landfill.

The CHD Bus FOLLOW THE BUS

Protect your health by avoiding 'frankenfoods'

Making food that requires genetically modified organisms inputs and produces more CO2 than conventional farming and hazardous biowaste to boot is hardly a sustainable model.

But then again, synthetic biology and processed foods are not being pushed out of true concern for sustainability.

If that was the goal, everyone would be looking at regenerative agriculture where every part of the system supports and sustains other parts, thereby eliminating the need for chemical inputs, radically reducing water needs while optimizing yields.

No, synthetic biology is pursued because it is a formidable control mechanism. Those who own all the synthetic food production will control the world in a very literal sense. To learn more about this plot for control, see "The Fake 'Food as Medicine' Agenda."

In short, the globalists already own and control most of the carbohydrates grown in the world today. By replacing real animal foods with patented lab-made protein alternatives, they'll have unprecedented power to control the world's population.

It'll also grant them greater control over people's health. It's already known that the consumption of ultra-processed food contributes to disease, and the benefactor of ill health is Big Pharma.

The processed food industry has spent many decades driving chronic illness that is then treated with drugs rather than a better diet. Synthetic foods will likely be an even bigger driver or chronic ill health and early death.

The fact is, fake meat and dairy cannot replace the complex mix of nutrients found in grass-fed beef and dairy, and it's likely that consuming ultra-processed meat and milk alternatives may lead to many of the same health issues that are caused by a processed food diet.

So, if you want to really protect your health and the environment, skip pseudo foods that require patents and stick to those found in nature instead.

Originally published by Mercola.

SUGGEST A CORRECTION

Dr. Joseph Mercola
Dr. Joseph Mercola is the founder of Mercola.com.

Sign up for free news and updates from Children's Health Defense. CHD focuses on legal strategies to defend the health of our children and obtain justice for those injured. We can't do it without your support

Republishing Guidelines

Children's Health Defense Comment Policy

We welcome relevant and respectful comments. Off-topic comments may be removed.

Please read our Comment Policy before commenting.

Got it

8 Comments

1 Login ▼

G

Join the discussion…

LOG IN WITH OR SIGN UP WITH DISQUS ?

Name

♡ Share

Best Newest Oldest

tag

11 days ago

I have great respect for Dr. Mercola. Always have. He is way more in tune to nutrition than 90% of the rest of the planet is. With all due respect I as an uneducated but interested nutritionist can take all the facts and figures and boil it down to a simple form. Read the Bible. It clearly tells us what to eat and what not to eat. God gave us everything we need to live a healthy life with plants, animals and herbs. Only the Frankenstein scientist wannabe God's think they can do it better. They can't. Lab grown meat? Milk that has a pull date 6 weeks in the future? Fruits and veggie coated with a plastic that can't be washed off? Don't worry though. These a pill for the ill you will get from eating this garbage. Pharma loves Big Ag.

4 0 Reply • Share ›

B

Boopjr

11 days ago

They will stop at Nothing to make us ill or kill us. If we are sick, they get rich. This lab grown meat is ridiculous at best and should be banded from being made. We know that will never happen, especially when Bill Gates name all over every bit of the poison being pushed. There's got to be a way wecan fight to stop this government from working for the corporations instead of the people! 🇺🇸

3 0 Reply • Share ›

D

Deirdre I Hobson ↗ Boopjr

7 days ago

Yes, form local communities and become active in all areas of community life.

All areas of life need to be thoroughly examined by individual people and..

1 0 Reply • Share ›

L **Lillith**

11 days ago

awful, just awful. May we never become so desperate that we have to eat that crap.

3 0 Reply • Share ›

D **Deirdre I Hobson**

7 days ago

This is why I ignore the "technocrats" claims with their trans human etc., chatter - Scientists cannot even make an effective Vaccine for the common cold.

How can the Scientists possibly even begin to replicate the intricacies' of the human body or for that matter the World itself - it depends on every individual human body what how when and so many other factors as to the amounts and chemicals the human body makes and interacts with all the other processes in the human body - every moment of the day & night. The incredible hubris that these "beings" have and the damage they do with their experimenting, with nature and man.

2 0 Reply • Share ›

V **Voyt Regnal**

11 days ago

Interesting topic, but it could be addressed in more compact form (I am aware of 'story at the glance')..yet still..
Here is something shorter:
https://www.nyc.gov/site/do....

2 0 Reply • Share ›

J **John Galt II**

6 days ago

We get a lot of our food directly from the farmer. Most of the meats are better than store bought. Corn on the cob is from a farmer that has his own corn seeds without any genetic pesticides, etc. Lab grown "meat" isn't meat, especially if it is from plants. There are only 2 foods that a person must have, protein and fat. There are some plant proteins, but unless you eat some beans, they are deficient in Lysine which is needed to repair our arteries and connective tissue. Fats are necessary, especially essential fatty acids since our bodies can't make them. That is why the 20 yr old female who only ate fruit, etc died in her 20's. Doctors are forever talking about "low fat" diets. Do you

Who only ate fruit, etc died in her 20's. Doctors are forever talking about "low fat" diets. Do you remember Pritican's low fat diet for heart disease? He had a coronary at a young age and then committed suicide. Cancer patients for example should eat a calorie restricted ketogenic diet as the sugars (which cancer eats) are kept to a minimum. Lab grown crap is nutritional crap. Dr Mercola is right. I for one, have also not had any vaxxes since 1981.

0 0 Reply • Share ›

Jeremy Beckman → John Galt II

6 days ago

Fibrous watery fruits are also a must. We need fiber and all the alkaline goodies in fruits. Fructose bound with fiber (in fruits) is nothing like refined sucrose and glucose (which both highly impact blood sugar levels). Fructose (from healthy organic fruits) is not harmful whatsoever as long as it's not eaten with a bunch of sticky fats.